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**REMARKS**

Entry of this Amendment is proper because it does not raise any new issues requiring further search by the Examiner, narrows the issues on appeal, and is believed to place the present application in condition for immediate allowance.

No claims have been amended. However, a complete listing of the claims is provided above for the Examiner's convience.

Claims 1-17, 22-39, 44-45, and 47-55 are all the claims presently pending.

With respect to the prior art rejections, claims 1-17, 22-39, 44-45, and 47 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Egger, et al. (U.S. Patent No. 6,233,571).

This rejection is respectfully traversed. Indeed, Applicant submits that all of the pending claims are patentable over the prior art of record.

**I. THE CLAIMED INVENTION**

Applicant's invention, as disclosed and claimed (e.g., as exemplarily defined in independent claim 1) is directed to a computer-implemented method (and system) of indexing data blocks according to a collection of subject words, which includes constructing a N-dimensional coordinate space, wherein N is a cardinality of the collection of subject words.

Independent claims 22, 23, 44, 45, and 47 recite combinations which include the above limitation that N is a cardinality of the collection of subject words.

With these aspects, the invention provides a new navigation pattern of the present invention which is referred to herein as "*Spatial Navigation*" (see application at pages 12-13). It is noted that this navigation model is not limited to the navigation of data in the Web, which implies the traversal of HTML links. It can be used in any kind of data base. Further, it can also

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be used to navigate documents in the World Wide Web *without* relying on the traversal of Web links.

Thus, in the invention, a method (and system) are provided in which data blocks are organized according to a spatial function derived from the metadata and hyperlink information which is contained within each block.

The spatial function used in the data organization method is exemplarily derived from a distance function which represents a measure of the relevance of any two data blocks indexed in the system. This method has applications in the fields of data mining and information retrieval and can also assist in the navigation and retrieval of data blocks stored in the World Wide Web (WWW).

Thus, for example, the invention allows mapping any document into a spatial coordinate such that the spatial coordinate can be viewed according to the content of the document. If two documents are in close proximity in the physical plane, then the two documents are related (e.g., relevant to one another). Thus, the search engine operates by mapping into spatial coordinates all of the pages which are taken in (e.g., via a crawler process scanning Web pages or the like, etc.), and calculates the coordinates of the page in the spatial plane.

Hence, when a user poses a query for some page, the system begins at the insertion point and "inserts" the user into this virtual space in a certain coordinate according to the search criteria that was stipulated. At this time, the new paradigm for retrieving the document in the spatial plane according to the invention is performed such that a radius is calculated from the insertion point (based on the search criteria) and a proximity list is generated. The proximity list indicates the document(s) which are adjacent (near the spatial plane/coordinates) the insertion point.

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It is noted that the invention uses a term-by-document matrix, but now with the present invention every row is associated with each other. In contrast, the rows in the conventional techniques are looked at in isolation (e.g., look at "IBM" alone and determine which documents have high counts, look at a second row for "XYZ" and determine which documents have a high score, etc.). However, as discussed below, the invention relates every row to one another.

For example, as discussed in the application at page 12, assuming a first row is "IBM", a second row is "Patents", a third row is "filed", and a fourth row is "Sun".

In such an example, a page which relates to IBM and patents, would have a very low count. However, if a second page included all of the patents in the world, then the count would be very high since not only IBM's patents are being looked at.

However, because the count for the word "Sun" is higher in the second page, this makes the second page more distant than the first page which related only to IBM. Thus, the invention uses terms, not necessarily asked for, to relate any two documents. Thus, a direction of a user's interest can be measured by correlating all of the terms used.

Such features as defined by the claimed invention are not taught or suggested by any other prior art of record.

## II. THE PRIOR ART REJECTION

### A. The Egger et al., Reference

In the "Response to Arguments" section of the present Office Action, the Examiner argues that, at col. 5, line 38-55 and the Abstract, Egger teaches building a system with n-dimensional vector space for representing data including textual objects, which is collecting of subject words, in a database or a network for searching/retrieving, and that, at column 16, lines

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12-35 and column 17, lines 38-48, Egger teaches providing a user interface with two or three dimensional spatial orientation of data.

The Examiner further argues that the subject words of textual object include words, phrase, terms, keywords, paragraphs or portions, as allegedly disclosed at column 13, lines 50-67, column 14, lines 1-8, and column 5, lines 38-55 of Egger.

For at least the following reasons, Applicant respectfully disagrees with the Examiner's position.

As mentioned above, the Examiner argues that the subject words of textual object include words, phrase, terms, keywords, paragraphs or portions, as allegedly disclosed at column 13, lines 50-67, column 14, lines 1-8, and column 5, lines 38-55 of Egger.

However, contrary to the Examiner's position, in Egger, the number "n", which determines the cardinality of the matrix, is obtained from the number of "textual objects" that are to be searched, as noted in column 16, lines 66-67, and NOT from the number of "subjects" of the "textual objects" (i.e., NOT from the number of words or terms of the textual objects).

Thus, Egger clearly fails to teach or suggest a method of indexing data blocks according to a collection of subject words, which includes "*constructing a N-dimensional coordinate space, wherein N is a cardinality of the collection of subject words*", as defined by independent claim 1 and the other independent claims.

For example, column 13, lines 51-53 of Egger discloses that any discrete text is treated as a "textual object". For example, case citations are treated as "full textual objects".

On the other hand, column 13, lines 58-63 of Egger discloses that "subjects" of a "full textual object" include words, phrases, paragraphs, or portions of other "full textual objects" that are referred to in a certain full "textual object".

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That is, in Egger, the number "n", which determines the cardinality of the matrix, is obtained from the number of "textual objects" that are to be searched, as noted in column 16, lines 66-67, and NOT from the number of "subjects" of the "textual objects" (i.e., NOT from the number of words or terms of the textual objects).

Therefore, the Opinion Pattern Matrix is simply used to represent the similarity of any two documents in the system, as determined by a complex procedure. The "n by n" matrix is a two-dimensional matrix, and cannot be considered a N dimensional coordinate system, as in the claimed invention.

Thus, Egger fails to teach or suggest a method of indexing data blocks according to a collection of subject words, which includes "constructing a N-dimensional coordinate space, wherein N is a cardinality of the collection of subject words", as defined by independent claim 1 and the other independent claims.

That is, Egger fails to teach or suggest constructing a N-dimensional coordinate space, wherein N is the cardinality of the collection of subject words. Indeed, an important aspect of the claimed invention is that a coordinate space of N dimensions is built, where N is the number of subject words. Neither Egger et al. nor any of the other prior art of record build such a coordinate space.

Applicant reiterates that Egger also does not disclose or suggest all of the features of the claimed invention for at least the reasons set forth in the Amendment filed on April 13, 2005, which is incorporated herein by reference in its entirety, for the Examiner's convenience.

To summarize, one of the differences between the claimed invention and Egger can be simply explained as follows. In Egger et al., each row of the matrix represents the relationship of one document with all the other n-1 documents in the system.

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In contrast, in the present invention, each document is represented as a vector which has a position in a coordinate system of **N key words**. The relationship is **INDEPENDENT** of any other document.

The advantages of the inventive system are quite significant. In the inventive system, a document can be added to the coordinate space without impacting the measurements of any other document. In Egger's system, the addition of a single document would require the entire recomputation of all the "n by n" matrices.

For the foregoing reasons, Applicant submits that Egger fails to teach or suggest using a **N dimensional coordinate space, where N is the number of key words**, as recited by claims 1-17, 22-39, 44, 45, and 47-55.

In view of all of the foregoing, the claimed invention is patentable over Egger et al., either alone or in combination (arguendo) with any of the other prior art of record.

### III. FORMAL MATTERS AND CONCLUSION

In view of the foregoing, Applicant submits that claims 1-17, 22-39, 44, 45, and 47-55, all the claims presently pending in the application, are patentably distinct over the prior art of record and are in condition for allowance. The Examiner is respectfully requested to pass the above application to issue at the earliest possible time.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary in a telephonic or personal interview.

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The Commissioner is hereby authorized to charge any deficiency in fees or to credit any overpayment in fees to Assignee's Deposit Account No. 50-0510.

Respectfully Submitted,

Date: August 15, 2005

  
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**CERTIFICATION OF FACSIMILE TRANSMISSION**

I hereby certify that I am filing this Amendment by facsimile with the United States Patent and Trademark Office to Examiner Anh Ly, Group Art Unit 2162 at fax number (571) 273-8300 on August 15, 2005.

  
John J. Dresch  
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